5

CLAIMS

- 1. A power cable comprising a conductive material core and at least one covering layer, characterized in that said layer is constituted essentially of a material comprising an inorganic compound of sheet structure and an organic compound inserted between the layers of said inorganic compound.
- 2. A power cable according to claim 1, wherein said inorganic compound is an inorganic oxide.
- 3. A power cable according to claim 2, wherein said inorganic oxide is clay chosen from kaolin, smectite, montmorillonite, bentonite, beidellite, nontronite, saponite, hectorite, vermiculite, wollastonite or a mixture thereof.
- 15 4. A power cable according to claim 3, wherein said clay is chosen from montmorillonite and bentonite.
 - 5. A power cable according to any preceding claim, wherein said organic compound is a polymer, a monomer or an oligomer.
- 20 6. A power cable according to claim 5, wherein said polymer is chosen from a polyolefin, polybutylene terephthalate, a vinyl polymer, an elastomer, silicone, their copolymers and a mixture thereof.
- 7. A power cable according to claim 5, wherein said polymer is chosen from an epoxy resin, polyester, polyamide, polyimide, polyetherimide, polyamidimide, polyurethane, silicone or a mixture thereof.
 - 8. A power cable according to any preceding claim, wherein the dovering layer comprises an insulative material layer constituted essentially of a material

5 by 30

BUJ.

comprising an inorganic compound of sheet structure and an organic compound inserted between the layers of said inorganic compound.

<u>a</u> 5

9. A power cable according to any preceding claim? wherein the covering layer comprises an external covering layer constituted essentially of a material comprising an inorganic compound of sheet structure and an organic compound inserted between the layers of said inorganic compound.

claim 1

10 A 10. A medium-voltage to high-voltage direct current power cable according to any of claims 1 to 7, wherein the covering layer comprises at least one semiconductor screen, characterized in that the semiconductor screen is constituted essentially of a material comprising an inorganic compound of sheet structure and an organic compound inserted between the layers of said inorganic compound.

15

Jan offers of the form of the first tent

11. A method of fabricating a power cable according to Claim claim, including the production of said material by the following steps:

a 20

- treating said inorganic compound with an agent to render it compatible with said organic compound,

25

- mixing the treated inorganic compound with said organic compound at a temperature higher than the temperature at which said organic compound softens or melts, and
- obtaining said material with said organic compound inserted between the layers of said inorganic compound.
- 30
- 12. A method according to claim 11, wherein said inorganic compound is clay and said compatibilizing agent is chosen from a quaternary ammonium salt, and an oxide of polyethylene and a phosphorus-containing derivative.

Add